UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/680,205	10/08/2003	Satoru Adachi	9683/261	7459

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
	10/680,205	ADACHI ET AL.
Office Action Summary	Examiner	Art Unit	
	Jayesh A. Patel	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>08 August 2007</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>2,6-8 and 10-27</u> is/are pending in the application.

    4a) Of the above claim(s) <u>1,3-5,9</u> is/are withdrawn from consideration.

5) ☐ Claim(s) <u>11 and 12</u> is/are allowed.

6) ☐ Claim(s) <u>2,6-8,10,14-27</u> is/are rejected.

7) ☒ Claim(s) <u>10 and 13</u> is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on <u>08 October 2003</u> is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

        1. ☒ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

Response to an amendment

1. The amendments to the Claims dated 08/08/2007 has been entered.

2. In view of the amendments new grounds of rejections have been introduced.

3. New grounds of rejections are therefore discussed below.

4. Claims 1,3-5 and 9 are cancelled from further prosecution.

Claim Objections

Claim 10 and 13 are objected. A computer readable medium "comprising" should

be replaced with storing or encoding. This would not flag issues of 35 USC 101

as raised in previous office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of
making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 14-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to

comply with the written description requirement. The claim(s) contains subject

matter, which was not described in the specification in such a way as to

reasonably convey to one skilled in the relevant art that the inventor(s), at the

time the application was filed, had possession of the claimed invention. Claim 14

recites phrases "an instruction analyzer configured-- and a coefficient list maker

configured--" have no support in the specification. The "instruction analyzer" and

"coefficient list maker" are tangible units, which are not explained in the

specifications or showed in the drawings.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 2,6 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by

Thyagarajan et al. (US 6529634) hereafter Thyagarajan.

5. Regarding Claim 2, Thyagarajan discloses an image decoding method of

decoding encoded data encoded by an image encoding method of dividing image

signals into blocks, performing an orthogonal transform of each block, reading

resultant orthogonal transform coefficients to obtain a coefficient string, and

performing entropy coding thereof, the image decoding method comprising:

a block selecting step of selecting a size of a block **(adaptively sized blocks)** for

the orthogonal transform, out of a plurality of blocks of different sizes **(Abstract,**

Fig 1, Fig 2, Elements 202,214, 224, Col 7 Lines 29-40); a decoding step of

performing decoding **(Fig 1 Element 106 and 120)** of the encoded data by

entropy coding adapted to a coefficient string in a block of a minimum size

(starting with 2 X 2 blocks within 4 X 4 blocks) out of the plurality of blocks (

Col 7 Lines 29-40); a coefficient string constructing step of **(Fig 2, Elements**

202,214, 224 where the coefficients are constructed on the basis of

variance level), when a block of a size larger than the minimum size is selected

in the block selecting step, constructing a coefficient string of the block of the

larger size from a plurality of coefficient strings decoded in the decoding step

(Fig 2 Element 106 and Col 8 Lines 50-62) and an inverse orthogonal

transforming step of decoding an image signal by performing an inverse

orthogonal transform on the coefficient string constructed in the coefficient string

constructing step **(Fig 2 Element 128 and Col 8 Lines 66 through Col 9 Lines**

1-6). Thyagarajan further discloses the block size selection can be a top down or

bottom up approach at **(Col 7 Lines 7-12)**.

6. Claim 6 is a corresponding apparatus Claim of method of Claim 2. See the

explanation of claim 2 and **(figs 1 and 2)**.

7. Claim 10 is a corresponding computer readable medium claim of claim 2. See

the explanation of Claim 2.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Thyagarajan in view of Smith (US 5454051) hereafter Smith.

8. Regarding Claim 7, Thyagarajan discloses the image decoding apparatus

according to Claim 6. Thyagarajan is silent and however does not disclose

wherein the coefficient string constructing means is configured to read

coefficients in the plurality of coefficient strings decoded by the decoding means,

from the lowest in a low frequency region and write the coefficients read out of

the respective coefficient strings, one by one in order into a new coefficient string

from the low frequency region, thereby obtaining the constructed coefficient

string.

Smith discloses wherein the coefficient string constructing means is

configured to read coefficients in the plurality of coefficient strings decoded by

the decoding means, from the lowest in a low frequency region and write the

coefficients read out of the respective coefficient strings, one by one in order into

a new coefficient string from the low frequency region, thereby obtaining the

constructed coefficient string **(Fig 5 and Col 4 lines 39-45)**. Smith discloses that

the technique of ordering groups similar frequencies for efficient coding of data.

Both Thyagarajan and Smith are from the same field of endevour and are

analogous art, therefore it would have been obvious for one of ordinary skill in

the art at the time the invention was made to have used the teachings of Smith in

the apparatus of Thyagarajan for the reasons above.

9. Regarding Claim 8, see the explanation of claim 7.

Claims 14-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Thyagarajan in view of Karczewicz et al (US 20040066974) hereafter

Karczewicz.

10. Regarding claim 14, Thyagarajan discloses a decoder **(Fig 1 element 106)**

for decoding encoded video data **(Fig 1 Element 102)** which comprises blocks of

transform coefficients **(Fig 2 Elements 202,214,218,224 and 230)**, comprising:

an instruction analyzer **(Fig 2 Element 204,206,214,216,224 and 226)**

configured to analyze an instruction from an encoder regarding reconstruction of

the video data; an entropy decoder configured to decode the blocks of transform

coefficients into decoded blocks of transform coefficients **(Fig 1 element 120)**;

and a coefficient list maker configured to combine the transform coefficients **(Fig

1 Element 122 which orders the coefficients according the scan scheme

employed to form a composite (combine) image)** according to an analysis

result from the instruction analyzer. Thyagarajan discloses multiple blocks as

seen in fig 2, however is silent and does not disclose the transform coefficients of the decoded blocks into a first list of transform coefficients in which the transform coefficients of a respective decoded block are interleaved with the transform coefficients of another decoded block.

Karczewicz discloses the transform coefficients of the decoded blocks into a first list of transform coefficients in which the transform coefficients of a respective decoded block are interleaved with the transform coefficients of another decoded block at **(Page 5 Para 0089-0090 and Page 3 Para 0032-0040)**. Karczewicz further disclose that the apparatus and method as disclosed reduces the bits in larger blocks than 4X4 that is having general size of (4n)X(4m) where n and m are positive integers equal to or greater than one **(Page 3 Para 0028-0032)**. Thyagarajan further discloses the block analysis at **(Col 7 lines 7-10 and Fig 2)** and ordering of the coefficients **(Element 122 in the decoder 106)** according the scan scheme (encoder) employed at **(Col 8 Lines 50-62)**. The instruction analyzer at **(Fig 2 Element 204,206,214,216,224 and 226)** calculates the coefficients from various blocks to be encoded by threshold. Both Thyagarajan and Karczewicz are from the same field of endeavor and are analogous art, therefore it would have been obvious for one of ordinary skill in the art at the time the invention was made to have used the teachings of Karczewicz in the decoder of Thyagarajan for the above reasons. .

11. Regarding claim 15, Thyagarajan and Karczewicz discloses decoder

according to claim 14. Thyagarajan further disclose wherein the decoded block

comprises 4 x 4 transform coefficients at **(Col 7 Lines 29-40)**. Although

Thyagarajan recites this at encoding, the reverse **(scan scheme employed at**

Col 8 Line 59) is employed at the decoder as known in the art. This is also

illustrated in Fig 2. Karczewicz discloses decoded block comprise at **(Page 5**

Para 0089-0090 and 0092).

12. Regarding claim 16, Thyagarajan and Karczewicz disclose a decoder

according to claim 14. Thyagarajan further disclose wherein the first list

comprises 8X8 transform coefficients at **(Col 7 Lines 35)**. Karczewicz also

disclose 8X8 coefficients at **(Page 4 Para 0072)**.

13. Regarding Claim 17, Thyagarajan and Karczewicz discloses a decoder

according to claim 14. Thyagarajan further disclose comprising a transformer

configured to perform an inverse discrete cosine transform on the transform

coefficients in the first list at **(Fig 1 Elements 128)**. Karczewicz also disclose

inverse transformation at **(Fig 3 Element 86)**.

14. Regarding Claim 18, Thyagarajan and Karczewicz discloses a decoder

according to claim 14. Thyagarajan further disclose wherein according to the

analysis result from the instruction analyzer, the coefficient list maker constructs

a second list of transform coefficients **(Fig 2 Block 224)** from a single decoded

block of transform coefficients **(Fig 2 block 230)**. The 4X4 blocks are constructed (second list created) from the 2X2 blocks. Thyagarajan discloses at **(Col 8 Lines 59-60)** that the coefficients are ordered according to the scan scheme employed which shows that at the decoding section the process is reverse of the encoding. Karczewicz also disclose transform list at **(Figs 8a-8d and Page 4 Para 0073-0076)**.

15. Regarding claim 19, Thyagarajan and Karczewicz discloses a decoder according to Claim 14 further comprising a second list maker configured to make a third list of **(Fig 2 Block 214)** transform coefficients from at least one first list of transform coefficients **(Fig 2 Block 230 2X2 blocks)**. Karczewicz also disclose transform list at **(Figs 8a-8d and Page 4 Para 0073-0076)**.

16. Regarding claim 20, Thyagarajan and Karczewicz discloses a decoder according to Claim 19 wherein the second list comprises 16 x 16 transform coefficients at **(Fig 2 Block 202)**. Karczewicz also disclose (4n)X(4m) which could result in 16X16 transform coefficients **(Figs 8a-8d, Page 3 Para 0031 and Page 4 Para 0073-0076)**.

17. Claim 21 is a corresponding method claim of the claim 14. see the explanation on Claim 14.

18. Claim 22 is a corresponding method claim of the claim 15. see the explanation on Claim 15.

19. Claim 23 is a corresponding method claim of the claim 16. see the explanation on Claim 16.

20. Claim 24 is a corresponding method claim as the Claim of Claim 17. see the explanation of claim 17.

21. Claim 25 is a corresponding method claim as the Claim of Claim 18. see the explanation of claim 18.

22. Claim 26, is a corresponding method claim as the Claim of Claim 19. see the explanation of claim 19.

23. Claim 27 is a corresponding method claim as the Claim of Claim 20. see the explanation of claim 20.

Allowable Subject Matter

Claims 11,12 are allowed.

Claim 13 will be allowed after fixing the 35 U.S.C 101 objections as explained in

Objections section above.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in

37 CFR 1.136(a). A shortened statutory period for reply to this final action is set

to expire THREE MONTHS from the mailing date of this action. In the event a

first reply is filed within TWO MONTHS of the mailing date of this final action and

the advisory action is not mailed until after the end of the THREE-MONTH

shortened statutory period, then the shortened statutory period will expire on the

date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In

no event, however, will the statutory period for reply expire later than SIX

MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from

the examiner should be directed to Jayesh A. Patel whose telephone number is

571-270-1227. The examiner can normally be reached on M-F 7.00am to 4.30

pm (5-4-9). If attempts to reach the examiner by telephone are unsuccessful, the

examiner's supervisor, Jingge Wu can be reached on 571-272-7429. The fax

phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jayesh Patel
10/05/07

JINGGE WU
SUPERVISORY PATENT EXAMINER